

What is claimed is:

1. An arrayed waveguide grating in which a waveguide-formed area having a waveguide is formed on a substrate, wherein the waveguide comprising:

one or more optical input waveguides arranged side by side;

a first slab waveguide connected to the output end of said optical input waveguides;

an arrayed waveguide including a plurality of channel waveguides arranged side by side, each having a length different from each other by a set amount, that are connected to the output end of said first slab waveguide and propagate light introduced from the corresponding first slab waveguide;

a second slab waveguide connected to the output end of said arrayed waveguide;

a plurality of optical output waveguides arranged side by side connected to the output end of said second slab waveguide;

wherein the focal length of said first slab waveguide and that of the second slab waveguide are established to become different from each other;

a continuous separation plane is formed so as to intersect with both the light channel of the first slab waveguide and the light channel of the second slab waveguide;

said waveguide-formed area is divided into the first

waveguide-formed area including said optical input waveguides and said optical output waveguides, and the second waveguide-formed area including said arrayed waveguide by said separation plane; and

a slide movement mechanism is provided, which causes at least one of the second waveguide-formed area and the first waveguide-formed area to slide and move along said separation plane.

2. An arrayed waveguide grating in which a waveguide-formed area having a waveguide is formed on a substrate, wherein the waveguide comprising:

one or more optical input waveguides arranged side by side;

a first slab waveguide connected to the output end of said optical input waveguides;

an arrayed waveguide consisting of a plurality of channel waveguides arranged side by side, each having a length different by a set amount from each other, that are connected to the output end of said first slab waveguide and propagate light introduced from the corresponding first slab waveguide;

a second slab waveguide connected to the output end of said arrayed waveguide;

a plurality of optical output waveguides arranged side by side connected to the output end of said second slab waveguide;

wherein the first slab center axis that is the center axis of said first slab waveguide in its optical advancing direction and the second slab center axis that is the center axis of said second slab waveguide in its light advancing direction are not established to be parallel to each other;

a continuous separation plane is formed along a separation line passing through said first and second slab waveguides;

the relationship between an angle θ_1 formed by said separation plane and said first slab center axis and an angle θ_2 formed by said separation plane and said second slab center axis is $\theta_1 \neq \theta_2$, and is established to be $(180^\circ - \theta_1) \neq \theta_2$;

said waveguide-formed area is divided into the first waveguide-formed area including said optical input waveguides and said optical output waveguides, and the second waveguide-formed area including said arrayed waveguide by said separation plane; and

a slide movement mechanism is provided, which causes at least one of the second waveguide-formed area and the first waveguide-formed area to slide and move along said separation plane.

3. The arrayed waveguide grating according to Claim 1, wherein said slide movement mechanism includes a slide movement member in the mode of stretching over the first waveguide-formed area and the second waveguide-formed area.

4. The arrayed waveguide grating according to Claim 2, wherein said slide movement mechanism includes a slide movement member in the mode of stretching over the first waveguide-formed area and the second waveguide-formed area.

5. The arrayed waveguide grating according to Claim 1, wherein said slide movement mechanism shifts the center wavelength of light transmission of the arrayed waveguide grating by a predetermined value by causing at least one of the first waveguide-formed area and the second waveguide-formed area to slide and move along said separation plane.

6. The arrayed waveguide grating according to Claim 2, wherein said slide movement mechanism shifts the center wavelength of light transmission of the arrayed waveguide grating by a predetermined value by causing at least one of the first waveguide-formed area and the second waveguide-formed area to slide and move along said separation plane.

7. The arrayed waveguide grating according to Claim 3, wherein said slide movement mechanism shifts the center wavelength of light transmission of the arrayed waveguide grating by a predetermined value by causing at least one of the first waveguide-formed area and the second waveguide-formed area to slide and move along said separation plane.

8. The arrayed waveguide grating according to Claim 4, wherein said slide movement mechanism shifts the center wavelength of light transmission of the arrayed waveguide

grating by a predetermined value by causing at least one of the first waveguide-formed area and the second waveguide-formed area to slide and move along said separation plane.

9. The arrayed waveguide grating according to Claim 1, wherein said slide movement mechanism causes at least one of the first waveguide-formed area and the second waveguide-formed area to slide and move along said separation plane in the direction to reduce the temperature dependency of the center wavelength of light transmission of the arrayed waveguide grating.

10. The arrayed waveguide grating according to Claim 2, wherein said slide movement mechanism causes at least one of the first waveguide-formed area and the second waveguide-formed area to slide and move along said separation plane in the direction to reduce the temperature dependency of the center wavelength of light transmission of the arrayed waveguide grating.

11. The arrayed waveguide grating according to Claim 3, wherein said slide movement mechanism causes at least one of the first waveguide-formed area and the second waveguide-formed area to slide and move along said separation plane in the direction to reduce the temperature dependency of the center wavelength of light transmission of the arrayed waveguide grating.

12. The arrayed waveguide grating according to Claim 4,

wherein said slide movement mechanism causes at least one of the first waveguide-formed area and the second waveguide-formed area to slide and move along said separation plane in the direction to reduce the temperature dependency of the center wavelength of light transmission of the arrayed waveguide grating.

13. The arrayed waveguide grating according to Claim 5, wherein said slide movement mechanism causes at least one of the first waveguide-formed area and the second waveguide-formed area to slide and move along said separation plane in the direction to reduce the temperature dependency of the center wavelength of light transmission of the arrayed waveguide grating.

14. The arrayed waveguide grating according to Claim 6, wherein said slide movement mechanism causes at least one of the first waveguide-formed area and the second waveguide-formed area to slide and move along said separation plane in the direction to reduce the temperature dependency of the center wavelength of light transmission of the arrayed waveguide grating.

15. The arrayed waveguide grating according to Claim 7, wherein said slide movement mechanism causes at least one of the first waveguide-formed area and the second waveguide-formed area to slide and move along said separation plane in the direction to reduce the temperature dependency of the center

wavelength of light transmission of the arrayed waveguide grating.

16. The arrayed waveguide grating according to Claim 8, wherein said slide movement mechanism causes at least one of the first waveguide-formed area and the second waveguide-formed area to slide and move along said separation plane in the direction to reduce the temperature dependency of the center wavelength of light transmission of the arrayed waveguide grating.